DVD-Video Recorder **DVDR3305/02/05/19/51**

DVDR3355/02/05/19/51 & DVDR3365/02/05/19/51

Service
Service
Service

Front Line Instruction

Service Manual

CLASS 1
LASER PRODUCT

DVD + ReWritable

VIDEO

DIGITAL VIDEO

DIGITAL AUDIO

Contents **Page**

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Version 1.0

PHILIPS

1. Technical Specifications and Connection Facilities

1.1 General:

Mains voltage	:	220V – 240V
Mains frequency	:	50 Hz
Power consumption (typical)	:	25 W
Standby Power Consumption	:	< 4 W

1.2 RF Tuner

Test equipment: Fluke 54200 TV Signal generator
Test streams: PAL BG Philips Standard test pattern

1.2.1 System

PAL B/G, PAL D/K, SECAM L/L', PAL I

1.2.2 RF - Loop Through:

Frequency range	:	45 MHz – 860 MHz
Gain: (ANT IN - ANT OUT)	:	-6dB to 0dB

1.2.3 Receiver:

PLL tuning with AFC for optimum reception

Frequency range	:	45.25 MHz – 857 MHz
Sensitivity at 40dB S/N	:	≥ 60dBµV at 75 Ω (video unweighted)

1.2.4 Video Performance:

Channel 25 / 503,25 MHz,
Test pattern: PAL BG PHILIPS standard test pattern,
RF Level 74dBV
Measured on SCART 1

Frequency response	:	0.1 – 4.00 MHz ± 3dB
Group delay (0.1 MHz - 4.4 MHz)	:	0 nsec ± 150 nsec

1.2.5 Audio Performance:

Audio Performance Analogue - HiFi:

Frequency response at SCART 1 (L+R) output	:	100 Hz – 12 kHz / 0 ± 3dB
S/N according to DIN 45405, 7, 1967 and PHILIPS standard test pattern video signal	:	≥ 50dB, unweighted
Harmonic distortion (1 kHz, ± 25 kHz deviation)	:	≤ 1.5%

Audio Performance NICAM:

Frequency response at SCART 1 (L+R) output	:	40 Hz – 15 kHz / 0 ± 3dB
S/N according to DIN 45405,7,1967 and PHILIPS standard test pattern video signal	:	≥ 60dB, unweighted
Harmonic distortion (1kHz)	:	≤ 0.5%

1.2.6 Tuning

Automatic Search Tuning

Scanning time without antenna	:	typ. 3 min.
Stop level (vision carrier)	:	≥ 37dBµV
Maximum tuning error of a recalled program	:	± 62.5 kHz
Maximum tuning error during operation	:	± 100 kHz

Tuning Principle
Automatic B, G, I, DK and L/L' detection
Manual selection in "STORE" mode

1.3 Analogue Inputs / Outputs

1.3.1 SCART 1 (Connected to TV)

Pin Signals:

1	- Audio R	1.8V RMS
2	- Audio R	
3	- Audio L	1.8V RMS
4	- Audio GND	
5	- Blue / GND	
6	- Audio L	
7	- Blue out	
8	- Function switch	< 2V = TV > 4.5V / < 7V = asp. Ratio 16:9 DVD > 9.5V / < 12V = asp. Ratio 4:3 DVD
9	- Green GND	
10	- NC	
11	- Green	0.7Vpp ± 0.1V into 75Ω (*)
12	- NC	
13	- Red GND	
14	- Fast switch GND	
15	- Red out	0.7Vpp ± 0.1V into 75Ω (*)
16	- Fast switch RGB / CVBS	< 0.4V into 75Ω = CVBS >1V / < 3V into 75Ω = RGB
17	- CVBS GND OUT	
18	- CVBS GND IN	
19	- CVBS out	1Vpp ± 0.1V into 75Ω (*)
20	- CVBS in	
21	- Shield	

1.3.2 SCART 2 (Connected to AUX)

Pin Signals:

1	- Audio R	1.8V RMS
2	- Audio R	
3	- Audio L	1.8V RMS
4	- Audio GND	
5	- Blue GND	
6	- Audio L	
7	- Blue in	
8	- Function switch	
9	- Green GND	
10	- NC	
11	- Green in	
12	- NC	
13	- Red GND	
14	- Fast switch GND	
15	- Red in	
16	- Fast switch RGB / CVBS	
17	- CVBS GND OUT	
18	- CVBS GND IN	
19	- CVBS / RGB out sync	1Vpp ± 0.1V into 75Ω (*)
20	- CVBS in	
21	- Shield	

(*) for 100% white

1.3.3 Audio/Video Front Input Connectors

Audio - Cinch

Input voltage	:	2.2Vrms
Input impedance	:	> 10kΩ

Video - Cinch

Input voltage	:	1Vpp ± 3dB
Input impedance	:	75Ω

Video - YC (Hosiden)

According to IEC 933-5
Superimposed DC-level on pin 4 (load > 100kΩ)
< 2.4V is detected as 4:3 aspect ratio
> 3.5V is detected as 16:9 aspect ratio

Input voltage Y	:	1Vpp ± 3dB
Input impedance Y	:	75Ω
Input voltage C	:	burst 300mVpp ± 3dB
Input impedance C	:	75Ω

1.3.4 Audio/Video Output rear Connectors

Audio - Cinch

Output voltage	:	2Vrms max.
Output impedance	:	> 10kΩ

Video - Cinch

Output voltage	:	1Vpp ± 3dB
Output impedance	:	75Ω

Video - YC (Hosiden)

According to IEC 933-5
Superimposed DC-level on pin 4 (load > 100kΩ)
< 2.4V is detected as 4:3 aspect ratio
> 3.5V is detected as 16:9 aspect ratio

Output voltage Y	:	1Vpp ± 10/-15%
Output voltage C	:	300mVpp ± 1/-4dB

1.4 Video Performance

All outputs loaded with 75 Ω
SNR measurements over full bandwidth without weighting.

1.4.1 SCART (RGB)

SNR	:	> -65dB on all output
Bandwidth	:	4.8MHz ± 2dB

1.5 Audio Performance CD

1.5.1 Cinch Output Rear

Output voltage 2 channel mode	:	2Vrms ± 2dB
Channel unbalance (1kHz)	:	< 1dB
Crosstalk 1kHz	:	> 95dB
Crosstalk 16Hz-20kHz	:	> 87dB
Frequency response 20Hz-20kHz	:	± 0.2dB max
Signal to noise ratio	:	> 85dB
Dynamic range 1kHz	:	> 83dB
Distortion and noise 1kHz	:	> 83dB
Distortion and noise 16Hz-20kHz	:	> 75dB
Intermodulation distortion	:	> 70dB
Mute	:	> 95dB
Outband attenuation:	:	> 40dB above 30kHz

1.5.2 Scart Audio

Output voltage 2 channel mode	:	1.6Vrms ± 2dB
Channel unbalance (1kHz)	:	< 1dB
Crosstalk 1kHz	:	> 85dB
Crosstalk 16Hz-20kHz	:	> 70dB
Frequency response 20Hz-20kHz	:	± 0.2dB max
Signal to noise ratio	:	> 80dB
Dynamic range 1kHz	:	> 75dB
Distortion and noise 1kHz	:	> 75dB
Distortion and noise 16Hz-20kHz	:	> 50dB
Intermodulation distortion	:	> 70dB
Mute	:	> 80dB
Outband attenuation:	:	> 40dB above 25kHz

1.6 Digital Output

1.6.1 Coaxial

CDDA / LPCM (incl MPEG1)	:	according IEC958, IEC60958-1,-3
MPEG2, AC3 audio	:	according IEC1937, IEC61937
DTS	:	according IEC1937, IEC 61937 amendment 1

1.7 Digital Video Input (IEEE 1394)

1.7.1 Applicable Standards

Implementation according:
IEEE Std 1394-1995
IEC 61883 - Part 1
IEC 61883 - Part 2 SD-DVCR (02-01-1997)

Specification of consumer use digital VCR's using 6.3 mm magnetic tape - dec. 1994
Annex A of 61883-1

1.8 Dimensions and Weight

Height of feet	:	5.5mm
Apparatus tray closed	:	WxDxH:435x285x65mm
Apparatus tray open	:	WxDxH:435x422x65mm
Weight without packaging	:	app. 4.0kg ± 0.5kg
Weight with packaging	:	app. 6kg

1.9 Laser Output Power & Wavelength

1.9.1 DVD

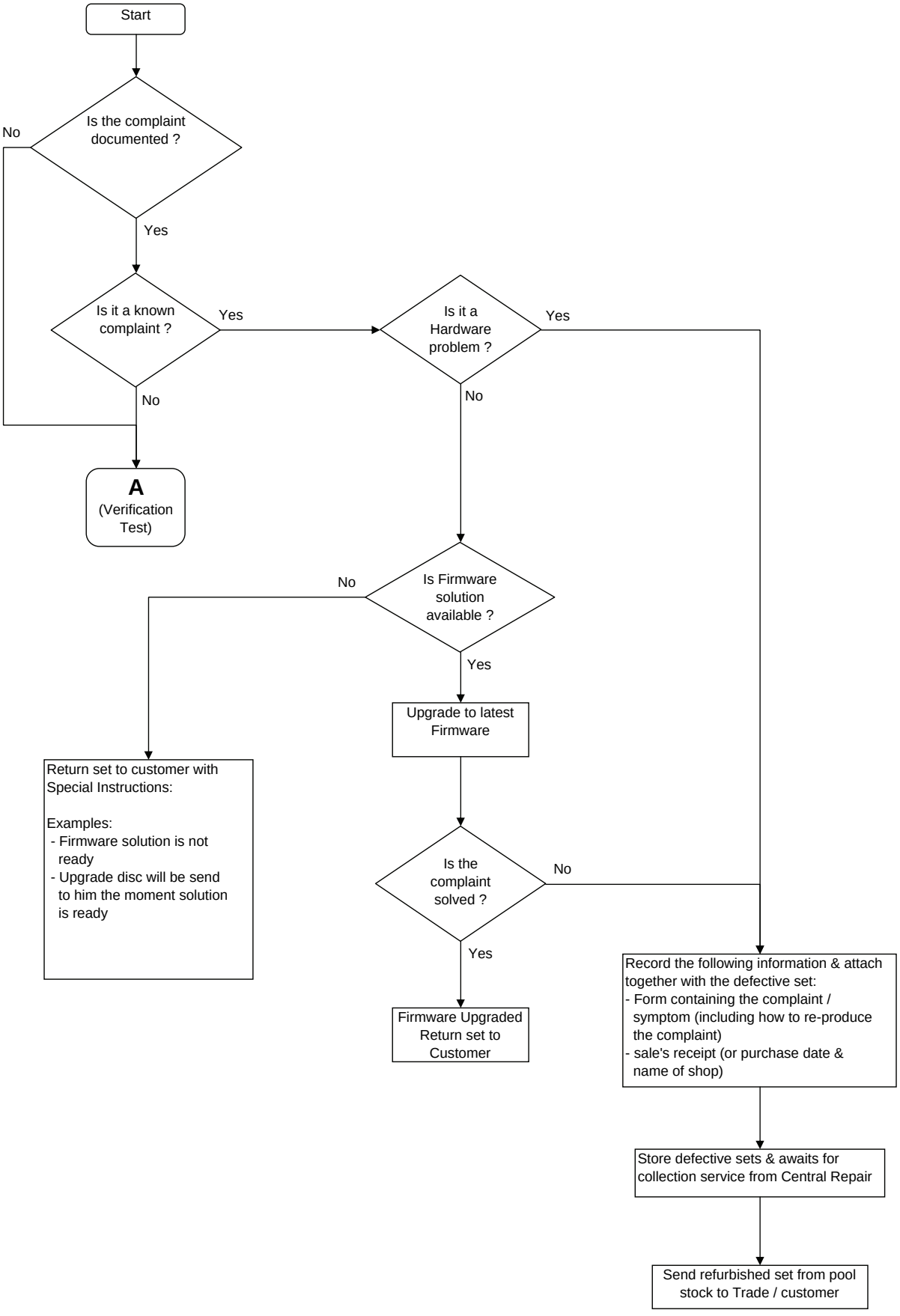
Output power during reading	:	0.8mW
Output power during writing	:	20mW
Wavelength	:	660nm

1.9.2 CD

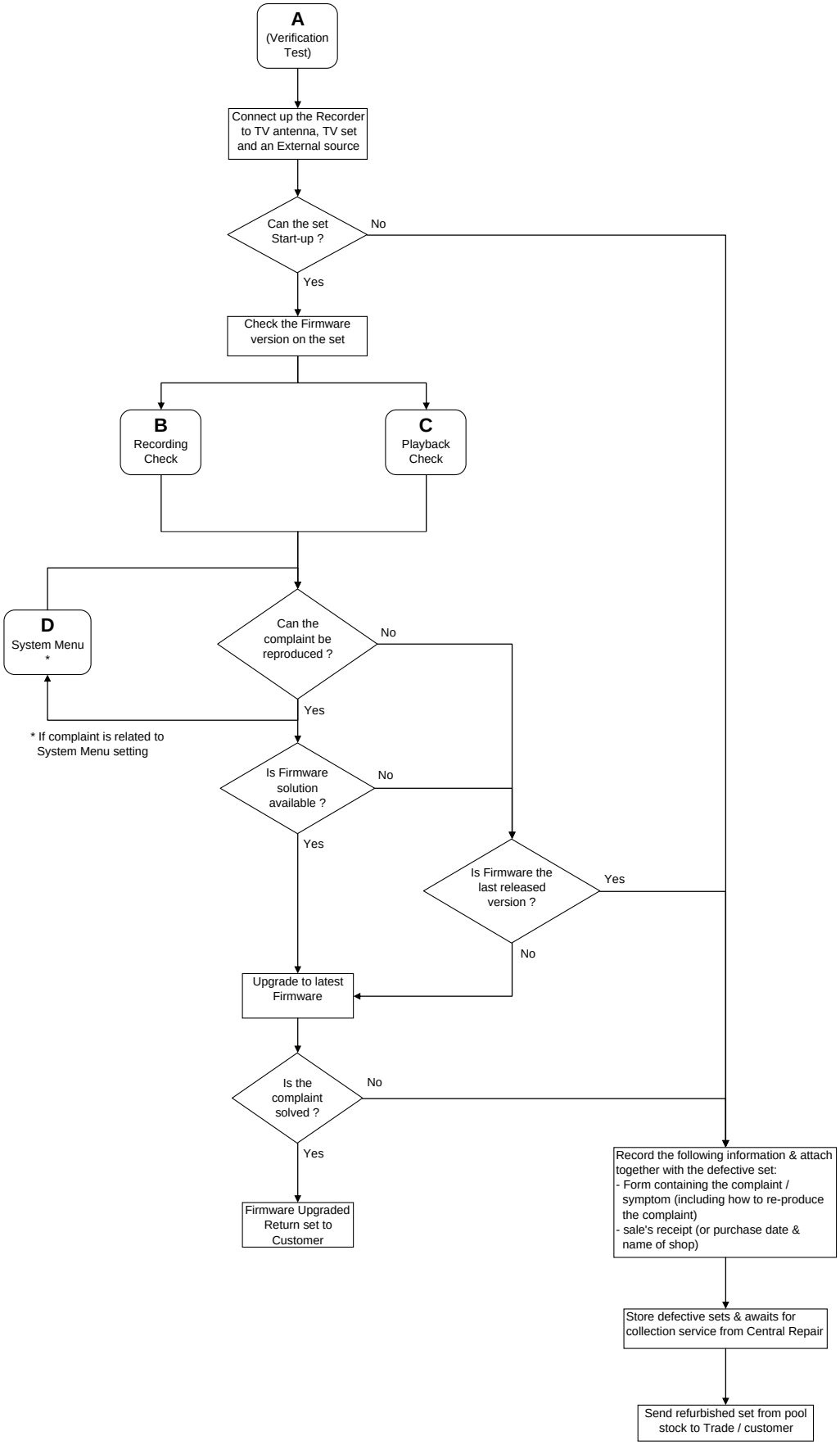
Output power	:	0.3mW
Wavelength	:	780nm

2. Service Flow Chart

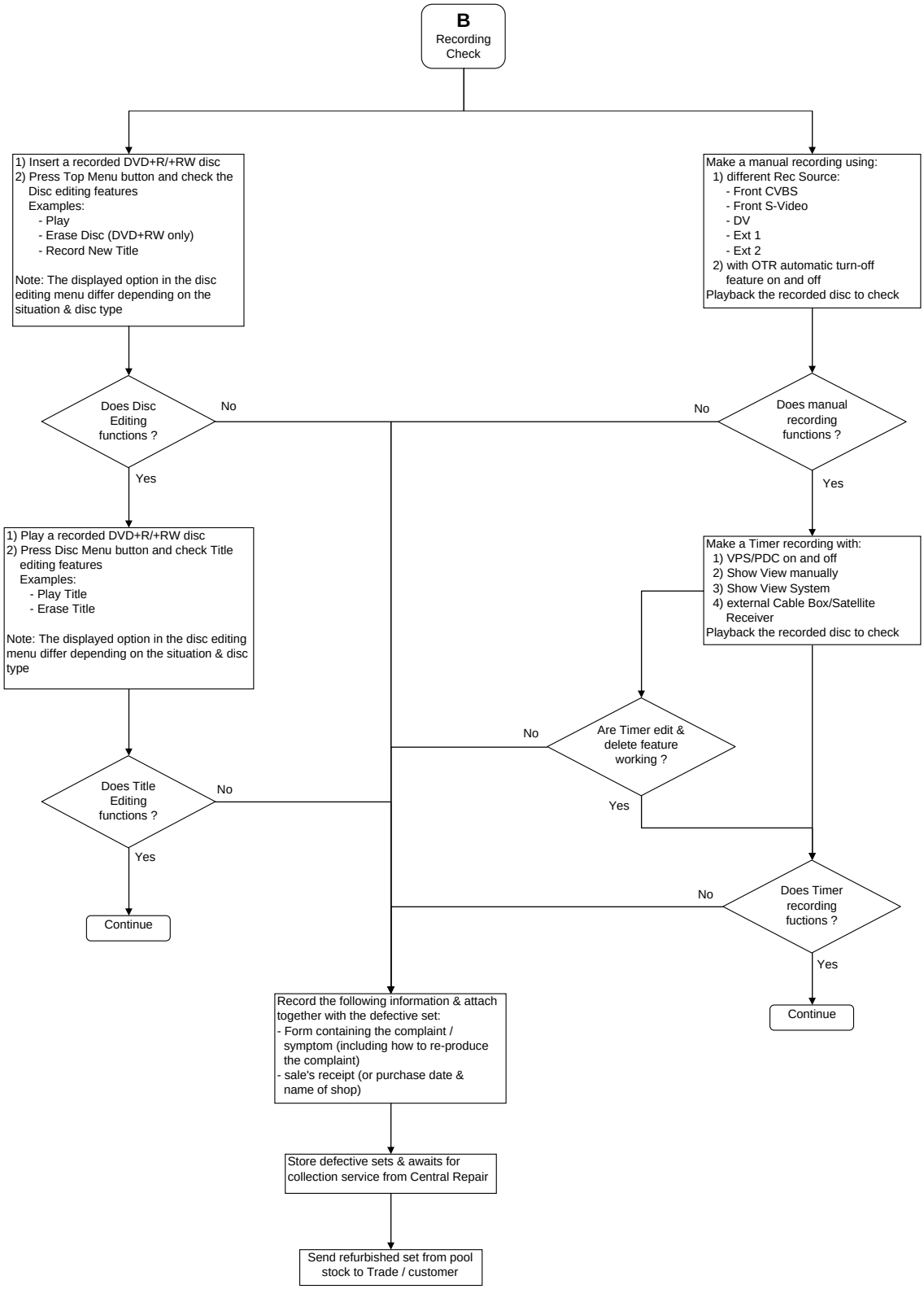
2.1 Start Process



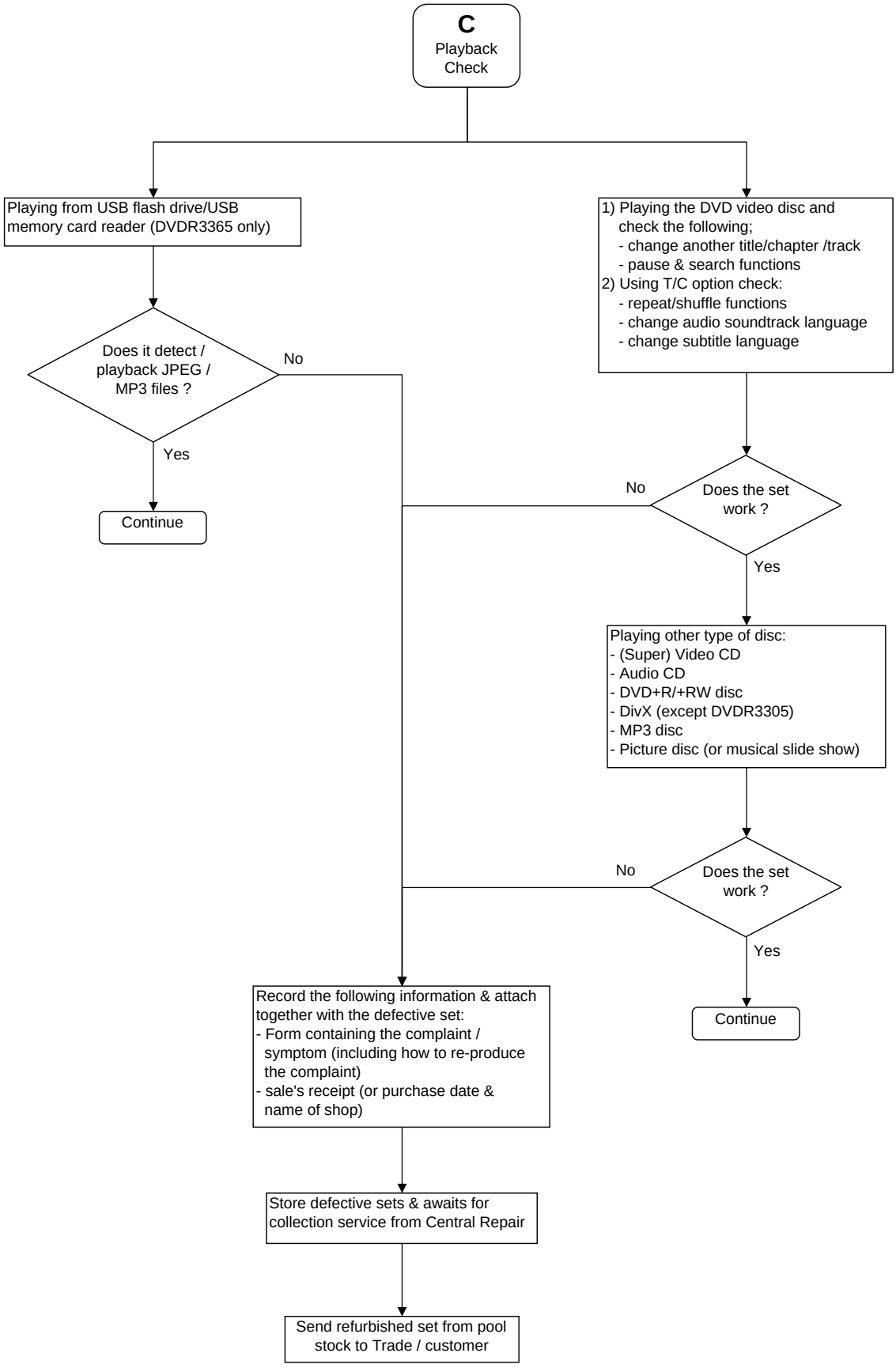
2.2 Verification Process



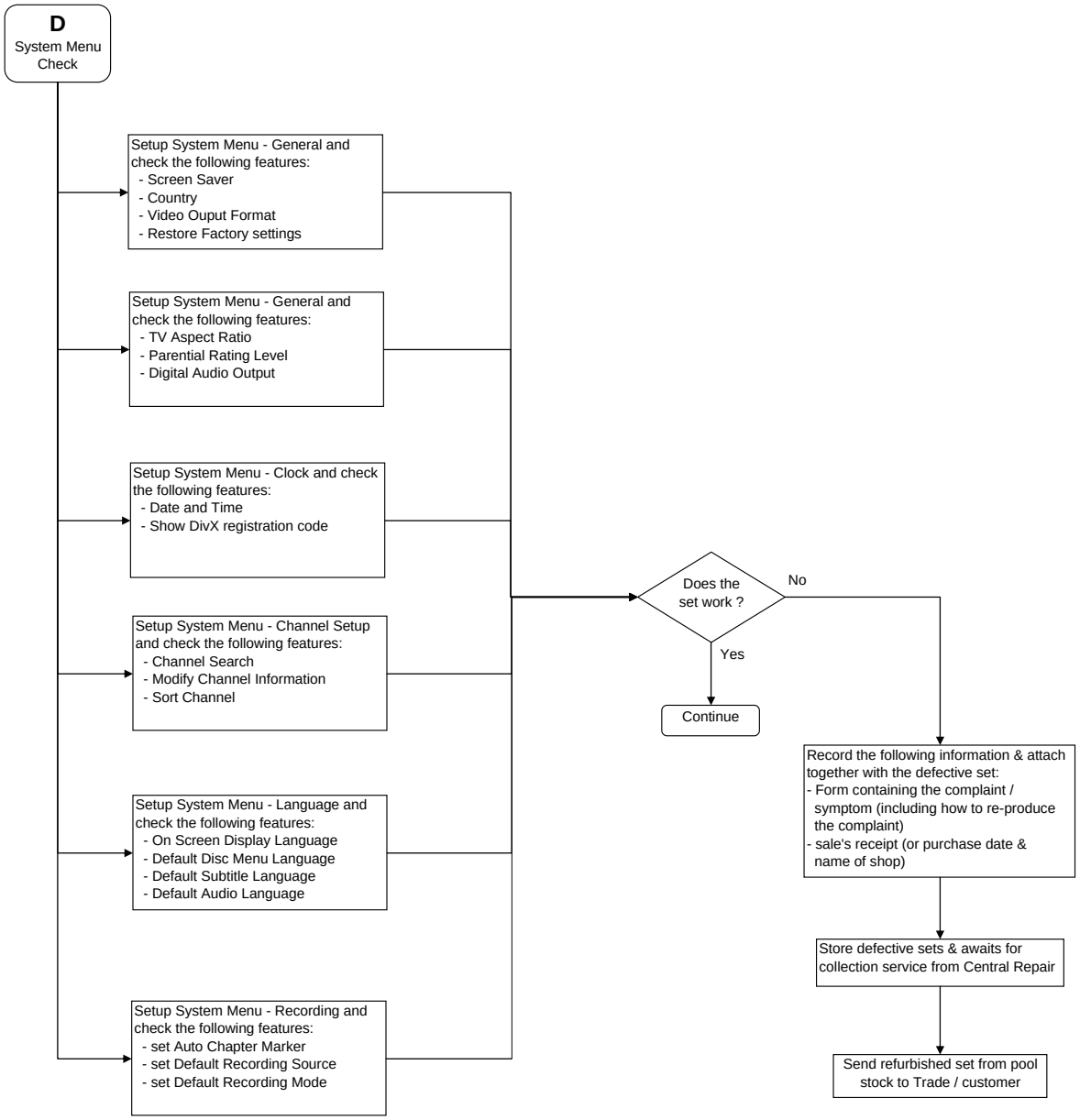
2.3 Recording Process



2.4 Playback Process



2.5 System Menu Process



3. Firmware Upgrading / version verification

A. Preparation to upgrade firmware:

1. Unzip the zip-archive file
2. Start the CD Burning software and create a new CD project (data disc) with the following settings:

   File system : Joliet
   Format : MODE 1: CDROM
   Recording mode : SINGLE SESSION (TRACK-AT-ONCE), FINALIZED CD

   Note: Long file name is necessary for the preparation of the upgrade disc

3. Place the content of the zip-archive into the root directory of the new CD project.
4. Burn the data onto a blank CDR or CD-RW

B. Procedure to apply the firmware upgrade:

1. Power up the set and open tray.
2. Insert the prepared Upgrade CDROM and close the tray.
3. The TV connected to the set will display:

   Software Upgrade Disc detected
   Select OK to start or CANCEL to exit

4. Select OK or CANCEL with the <Right> or <Left> button and press <OK> button to confirm.
5. The TV connected to the set will display:

   Upgrading Software, Please wait
   Do not switch off the power

6. When the upgrading process is successful the tray will open and the TV connected to the set will display:

   System is successfully upgraded.
   Remove disc from tray & reset system

7. Remove the Upgrade Disc and press <OK> button on Remote control to confirm
8. The TV screen goes blank and the Philips Logo screen appear again after the tray door has closed.

C. How to Restore Factory setting (Default setting)

1. Power up the set and with no disc in the tray
2. Press <System Menu> <Right> and 4x <Down> buttons on the Remote control to reach the Restore Factory setting option.
3. Press <OK> button and the TV connected to the set will display:

   System will reset to the Factory settings.
   Select OK to confirm or CANCEL to exit.

4. Select OK or CANCEL with the <Right> or <Left> button and press <OK> button to confirm.

   Note: All customers' settings will be lost.

D. How to read out the firmware version to confirm set has been upgraded.

1. Power up the set and with no disc in the tray
2. Press <0009> and <OK> buttons on the Remote control
3. The TV connected to the set will display:

   DVDR3365_75_BT3_2, Drive: 43.02.11 Build: FAE6206 Apr 21 2005, 18:49:43

   where DVDR3365_75 = Type/version
   BT3_2 = Application (Backend) firmware version
   43.02.11 = Drive (Basic Engine) firmware version

4. Directions For Use

The following except of the Quick Use Guide serves as an introduction to the set.
The Complete Direction for the Use can be downloaded in different languages from the internet site of Philips Customer care Center:
www.p4c.philips.com

QUICK START GUIDE

1 what's in the box

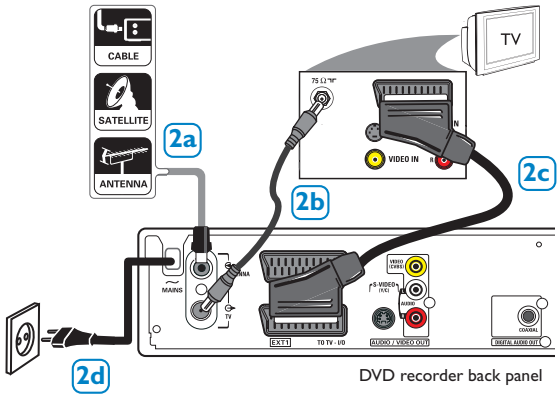
Ⓐ **Main Unit**

Ⓑ **Remote Control**
includes 2x AA batteries

Ⓒ **RF coaxial cable**

Ⓓ **Scart cable**

2 connect DVD recorder



DVD recorder back panel

2a Connect existing antenna cable/satellite signal (or from the Cable/Satellite Box [RF OUT or TO TV]) to the **ANTENNA** ⊖ input socket at the back of the DVD recorder.

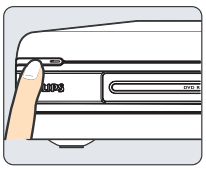
2b Use the supplied RF coaxial cable to connect the DVD recorder's **TV** ⊖ output socket to your TV's antenna input socket.

2c Use the supplied Scart cable to connect the DVD recorder's **EXT 1 TO TV-I/O** socket to the matching SCART input socket at the back of your TV.

2d Connect the power cable from the DVD recorder's **~ MAINS** to the AC power outlet.

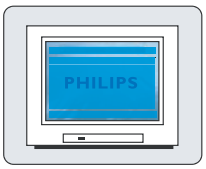
Helpful Hint:
For additional connection diagrams, see User Manual pages 12~19.

3 Start initial setup

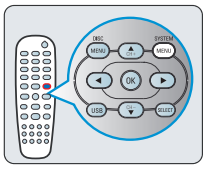


3a Press **STANDBY-ON** ⏻ on the DVD recorder to turn it on.

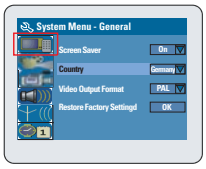
Note: *For successful installation, your cable/satellite box must be turned on.*



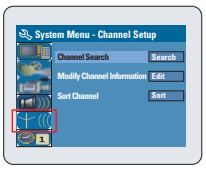
3b Turn on the TV to the correct programme channel for the input socket ('EXT','0','AV').
➜ The blue PHILIPS DVD background screen will appear on the TV.



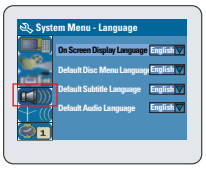
3c Press **SYSTEM MENU** on the remote control.
➜ Use ▲▼ keys to go through the menu. Select an item by pressing ▶, and confirm a setting by pressing **OK**.



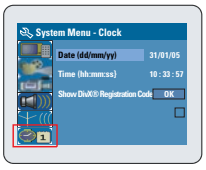
3d Highlight  and press ▶.
Select the country of your residence..
Select { **Country** } and press **OK** on the remote control.



3e Highlight  and press ▶.
Setup and install TV channels.
Select { **Channel Search** } and press **OK** on the remote control to start automatic TV channel search.



3f Highlight  and press ▶.
Select the language.
- select TV On-Screen Display language.
- select default Disc Menu language.
- select default subtitle language.
- select default audio language.



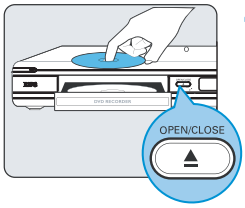
3g Highlight  and press ▶.
Set the Date and Time.
Use the **numeric keypad 0-9** to input the date/time, then press **OK** to confirm.

3h Press **SYSTEM MENU** to exit.

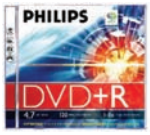
The DVD recorder is ready for use!

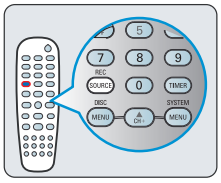
See next page for basic recording and playback.

4 start manual recording



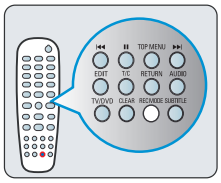
4a Insert a recordable DVD+R/+RW with the label facing up.





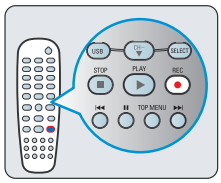
4b To record TV programme, press **REC SOURCE** to select { Tuner }.

To record from an external device connected to this DVD Recorder, press **REC SOURCE** repeatedly to select the corresponding external input channel : { Front CVBS } { Front S-Video }, { DV }, { EXT 2 }.

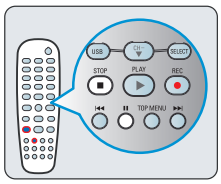


4c Press **REC MODE** to select a desired recording mode.
It defines the picture quality and the maximum recording time for a disc.

Maximum Recording Time per Disc	Picture Quality	Record Mode
1 hour	High quality	1 Hour Mode
2 hours	DVD quality-Standard Play	2 Hour Mode
4 hours	VHS quality-Extended Play	4 Hour Mode
6 hours	VHS quality-Super Long Play	6 Hour Mode



4d Press **REC** ● to start recording.

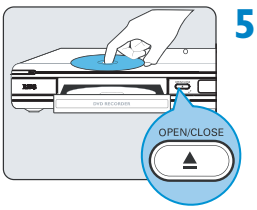


4e To pause the recording, press **II**.
To resume recording, press **REC** ●.

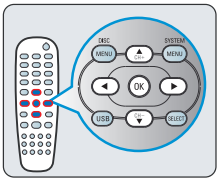
To stop the recording, press **STOP** ■.
➜ Wait until the message disappears from the display panel before you remove the disc.

5 start playback

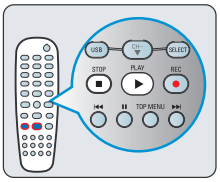
To playback a disc



5a Insert a disc with the label side facing up.

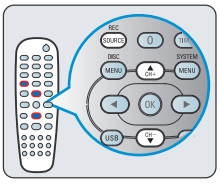


5b Playback may start automatically.
If not, press **PLAY** ▶.
➜ If a disc menu appears, use ◀ ▶ ▲ ▼ keys to navigate within the menu, highlight a title and press **OK** to start playback.



5c To stop playback, press **STOP** ■.

To watch the TV programmes



5d Press **REC SOURCE** to select { Tuner }, then use ▲ ▼ keys to select the programme number.

GET PICTURE

- Check the AV mode on TV. It may be called FRONT, A/V IN, or VIDEO. Choose the different modes using TV remote control.
- Or, use the TV remote control to select Channel 1 on TV, then press Channel down button until you get the picture.
- See your TV manual for more details.

GET SOUND

- Use the supplied scart cable to connect the DVD recorder to your TV, the picture and sound will output through the TV.
- Or, connect the AUDIO L/R (red/white) sockets at the back of the DVD recorder to the corresponding AUDIO input sockets on a TV, stereo system or receiver. Turn on the connected system and select the appropriate channel.

Be responsible
Respect copyrights